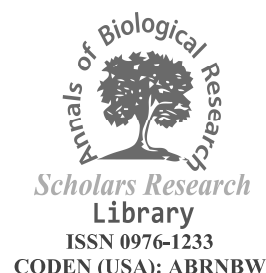




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Anti-obesity and anti-hyperlipidemic effect of *Citrullus colocynthis* oil in the offspring of obese rats

Radjaa kaouthar Meziane, Latifa Khemmar, Fouzia Amamou, Mohamed Yazit, Amel Didi, Daoudi Chabane-Sari

Laboratory of Natural Products in Department of Biology, University of Tlemcen, Tlemcen, Algeria

ABSTRACT

This study aims to test the effect of colocynth oil extracted from seeds of *Citrullus colocynthis* (medicinal plant known for their various therapeutic properties) on the offspring of rats Wistar obese. Three groups of male Wistar rats were established ($n = 6$): group 1 (control group) containing the offspring of control mothers receiving a diet iso-caloric (4% sunflower oil), group 2 containing the offspring of mothers obese receiving a high-calorie diet (32% sunflower oil) and Group 3 containing the offspring of obese mothers receiving a high-calorie diet based on a mixture of 28% sunflower oil + 4% oil of colocynth. After 8 weeks of diet, the offspring were sacrificed. Blood and organs were harvested. Weight, blood glucose, cholesterol, and triglycerides were measured. Our results showed a significant decrease in body weight in offspring of obese mothers fed a diet of colocynth oil, compared to obese rats, but remain almost parallel to that of controls. Furthermore, the glucose values remain within physiological limits in group 1 and 3 while those of group 2 increased significantly. On lipid markers, we scored a significant increase of triglycerides in obese rats compared with controls. The same result was found for cholesterol. For rats receiving oil of colocynth, these values remain in the standards. This study suggests that colocynth oil has a lowering effect on weight control, lipid profile and glucose in offspring of obese rats.

Keywords: Obesity; Offspring; Animal model; *Citrullus colocynthis* oil; Sunflower oil; Lipid parameters.

INTRODUCTION

Obesity rates in our society are at an all-time high, proportionately affecting reproductive-age women. Obesity in pregnancy is associated with a high frequency of adverse pregnancy outcomes, having both perinatal and long-term implications for mother and her offspring [1]. The impact of obesity in pregnancy on offspring risk of obesity requires further research. Moreover, nutrition guidance regarding appropriate pregnancy weight gain has not evolved to address the obesity epidemic [2].